

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: JASON L. FULLER AND
SHAUN D. COMPTON

APPLICATION NO.: 10/081,624

FILED: FEBRUARY 20, 2002

FOR: **MICROELECTRONIC DEVICE HAVING A
PLURALITY OF STACKED DIES AND
METHODS FOR MANUFACTURING
SUCH MICROELECTRONIC
ASSEMBLIES**

EXAMINER: JOHN T. HARAN

ART UNIT: 1733

CONF. NO: 1950

**Declaration of David T. Dutcher Under 37 C.F.R. §1.132
to Establish Diligence**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, David T. Dutcher, do hereby declare:

1. The facts set forth in this Declaration are personally known to me based on (a) the time records of the law firm of Perkins Coie, LLP ("Perkins Coie") (hereinafter, the "Time Records," a redacted copy of which is attached to this Declaration as Exhibit A), and (b) the signed pages of Micron Technology, Inc. Invention Disclosure Form 01-0427 (hereinafter, the "01-0427 Disclosure," a copy of which is attached to this Declaration as Exhibit B).

2. I am an attorney at Perkins Coie, located at 1201 Third Avenue, Suite 4800, Seattle, Washington 98101, and I am outside patent counsel for Micron Technology, Inc. ("Micron").

3. On March 26, 2003, Jason L. Fuller and Shaun D. Compton, the joint inventors of the present application, signed the 01-0427 Disclosure.

4. On April 30, 2001, Micron's in-house patent legal department received the 01-0427 Disclosure from the inventors.

5. Between April 30, 2001 and July 24, 2001, Micron's Patent Committee reviewed and analyzed the 01-0427 Disclosure with regard to pursuing patent protection.

6. On July 24, 2001, the 01-0427 Disclosure was mailed to Perkins Coie.

7. Between July 24, 2001 and September 19, 2001, Paul Parker, an attorney at Perkins Coie, had a reasonable backlog of unrelated cases which he took up in chronological order and carried out expeditiously.

8. On September 19, 2001, Paul Parker reviewed the 01-0427 Disclosure and prepared and sent correspondence to J. Webster, a patent assistant at Micron, to set up an interview with the inventors.

9. On September 26, 2001, Paul Parker prepared correspondence to J. Webster and held a telephone conference with J. Webster regarding interviewing the inventors.

10. On October 4, 2001, Paul Parker prepared for an invention disclosure meeting with the inventors.

11. On October 5, 2001, Paul Parker held an invention disclosure meeting with the inventors, and prepared notes regarding same after the meeting.

12. On November 7, 2001, Paul Parker reviewed the 01-0427 Disclosure and prepared claims.

13. On November 8, 2001, Paul Parker further prepared claims, informal figures, and a draft of the specification.

14. On November 13, 2001, Paul Parker further prepared the claims, the background section, and the informal figures.

15. On November 14, 2001, Paul Parker further prepared the specification of the application.

16. On November 15, 2001, Paul Parker revised and edited a draft of the application, and prepared additional description of embodiments of the invention.

17. On November 19, 2001, Paul Parker further prepared the application.

18. On November 20, 2001, Paul Parker revised and edited the application.

19. On November 29, 2001, Paul Parker proofed the final edits to the application.

20. On November 30, 2001, Paul Parker proofed the drawings and the application.

21. On December 3, 2001, Rena lov, a paralegal at Perkins Coie, prepared correspondence to forward the first draft of the application to the inventors.

22. Between December 3, 2001 and December 27, 2001, Jason L. Fuller and Shaun D. Compton (the inventors) reviewed the first draft of the application.

23. On December 27, 2001, Micron mailed the first draft of the application with the inventors' comments to Perkins Coie.

24. On January 7, 2002, Paul Parker reviewed the comments from the inventors and revised the application.

25. On January 19, 2002, Paul Parker proofed the edits to the application.

26. On January 22, 2002, Paul Parker finalized revisions to the second draft of the application.

27. On January 22, 2002, Renalov mailed the second draft of the application to the inventors.

28. Between January 22, 2002 and February 20, 2002, Jason L. Fuller and Shaun D. Compton (the inventors) reviewed the second draft of the application.

29. On February 20, 2002, Paul Parker reviewed and signed the documents to file the present application with the U.S. Patent and Trademark Office.

30. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that the making of willfully false statements and the like is punishable by fine, or imprisonment, or both, under Section 101 of Title 18 of the United States Code.

Date: 9/19/05

Respectfully submitted,
Perkins Coie LLP



David T. Dutcher
Registration No. 51,638

Correspondence Address:

Customer No. 25096
Perkins Coie LLP
P.O. Box 1247
Seattle, Washington 98111-1247
Phone: (206) 359-8000



Attorney Docket No. 108298636US
Disclosure No. 01-0427.00/US

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Exhibit A



Important Note: You need to look carefully at the status code on this page. For time entries with a "P" (prebill) status, the "Billed Amount" reflects the matter value of time on the prebill. Such time has not yet been billed to the client. Only time entries with a "B" status have actually been billed to the client.

Time Detail

additional search criteria: Beginning Date: **Inception** Ending Date: **9/9/2005** Status: **'W','P','B'**

CSL: Parker, Paul T.

Client/Matter: 10829 Micron Technology, Inc. 8636.US00 Method for Processing a Stacked FCIP (FI

| Time ID | Tkpr ID | Tkpr Name | Date | Base Hours | Billed Hours | Status | Invoice | Base Amount | Billed Amount | Phase/ Task |
|----------------|---------|-----------------|-----------|------------|--------------|--------|---------|-------------|---------------|-------------|
| 7204246 | 08821 | Parker, Paul T. | 9/19/2001 | | | | | | | |

Narrative: Review disclosure regarding interviewing inventors; prepare and send correspondence to J. Webster to set up interviews;

7221505 08821 Parker, Paul T. 9/26/2001

Narrative: Prepare correspondence to J. Webster and telephone conference with J. Webster regarding interviewing inventors;

7238050 08821 Parker, Paul T. 10/4/2001

Narrative: Prepare for meeting at Micron regarding disclosure of invention;

7237717 08821 Parker, Paul T. 10/5/2001

Narrative: Disclosure conference with inventors regarding explaining invention and alternate embodiments; prepare notes regarding same after conference;

7323419 08821 Parker, Paul T. 11/7/2001

Narrative: Review disclosure and prepare claims;

7325838 08821 Parker, Paul T. 11/8/2001

Narrative: Further prepare claims; prepare informal figures; prepare draft of specification;

7340922 08821 Parker, Paul T. 11/13/2001

Narrative: Further prepare claims; prepare background and informal figures;

7340944 08821 Parker, Paul T. 11/14/2001

Narrative: Further prepare specification regarding application;

7340969 08821 Parker, Paul T. 11/15/2001

Narrative: Revise and edit draft of application; prepare additional description of embodiments of the invention;

7359521 08821 Parker, Paul T. 11/19/2001

Narrative: Further prepare application;

7359522 08821 Parker, Paul 11/20/2001
T.

Narrative: Revise and edit application;

7379032 08821 Parker, Paul 11/29/2001
T.

Narrative: Proof final edits to applications;

7379033 08821 Parker, Paul 11/30/2001
T.

Narrative: Proof drawings and application;

7372334 08867 Iov, Rena 12/3/2001

Narrative: First draft of application; prepare Declaration; prepare Assignment; prepare Election and Power of Attorney; prepare Nonpublication Request; prepare application cover sheets; correspondence to client enclosing and forwarding same for review and signature;

7468368 08821 Parker, Paul 1/7/2002
T.

Narrative: Review comments from inventors and revise application;

7490857 08821 Parker, Paul 1/19/2002
T.

Narrative: Proof edits to application;

7505423 08821 Parker, Paul 1/22/2002
T.

Narrative: Final revisions and send out second draft of application to client;

7485605 08867 Iov, Rena 1/22/2002

Narrative: Second draft of application; prepare application cover sheets; prepare redlined pages; correspondence to client enclosing application along with Declaration, Assignment, Election and Power of Attorney and Nonpublication Request;

7571191 08867 Iov, Rena 2/20/2002

Narrative: Final application; prepare PTO/SB/05; count claims and calculate fees; prepare General Authorization and Fee Transmittal; prepare drawing labels; prepare Form PTO-1595 for Assignment recordation; prepare filing fee check; prepare return receipt postcard; file all of same in the U.S. Patent and Trademark Office;

7580329 08821 Parker, Paul 2/20/2002
T.

Narrative: Review and sign documents regarding filing application in PTO;

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Exhibit B

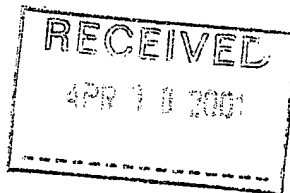
INVENTION DISCLOSURE

01-0427

1. INVENTOR(S):

Jason L Fuller
Shaun D Compton

2. DESCRIPTION:



• Title:

Method for processing a stacked FCIP (Flip Chip & Conventional in 1 pkg.)

• Brief Description:

Method includes the following in order: (1)Placing a flip chip component on the substrate (2)Dispensing epoxy on the backside of the flip chip (3)Placing another die into the epoxy (face up) on the back side of the flip chip. This process will only require one pass through the die attach machine. The substrate then indexes into the oven for solder reflow and epoxy snap cure at the same time. Another method would include utilizing a heated bond head to reflow the flip chip during placement. The flip chip die would then be mechanically attached during dispensing and placing the conventional die.

3. CONCEPTION & DOCUMENTATION OF INVENTION:

• Date when first conceived:

03/01/2001

• To whom was the idea first described:

none

• On what date:

• Date of the first tangible record:

03/13/2001

• Type and location:

Logged concept into Inventors Notebook.

4. INFORMATION RELATED TO INVENTION:

• Related invention disclosures:

I'm sure many stacked die disclosures exist, however, I don't know the details of any related to this concept. There is Micron internal documentation which depicts this titles "Conventional/FCIP Stack"

dated December 2000. The method for processing is undefined as far as I know.

- **Closest technology:**

A two pass process where the flip chip is reflowed, and then ran through die attach a second time to apply the conventional (2nd) die.

- **Advantages of this invention over previous technology:**

This would only require one pass through a die attach machine which increases output and simplifies the process.

5. IMPORTANT DATES:

- If the invention has been disclosed outside the company, please specify to whom it has been disclosed, when, and in what form:

No disclosures outside Micron

- If any articles describing your invention have been published, please specify the author(s), title of article, publication and date:

Don't know of such publications

- If any engineering samples have been given out, please specify to whom and on what date they were given:

N/A

- If any product using the invention has been sold or offered for sale, please specify to whom and on what date:

N/A

6. DISPOSITION OF THE INVENTION:

- **When will (or did) Micron begin use of the invention experimentally:**

Experiments will begin the week of 04/09/2001.

- **When will (or did) Micron begin production of this invention:**

No production to date. Applications are on the roadmap for late 2001.

7. MISCELLANEOUS INFORMATION:

- **ARPA project:**

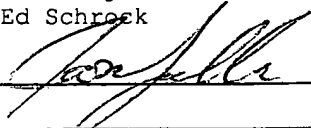
- **Was the invention developed during a joint development agreement or other contract with an outside company:**


No

- List developmental work outside of the company, including Government proposal or contract:

N/A

8. INVENTORS:

• _____
Name : Jason L Fuller
Home Address : 1287 E. Drucker
City : Meridian State : ID Zipcode : 83642
Citizenship : USA
Company : Micron Technology, Inc.
Work Phone # : 368-2669 Mail Stop : 906
Dept Name : Assembly Die Attach Dept # : 224
Supervisor : Ed Schrock
Signature :  Date : 3/26/2001

• _____
Name : Shaun D Compton
Home Address : 1651 S. Riverstone Lane #202
City : Boise State : ID Zipcode : 83706
Citizenship : US
Company : Micron Technology, Inc.
Work Phone # : 363-1999 Mail Stop : 906
Dept Name : Assembly Dept # : 224
Supervisor : Ed Schrock
Signature :  Date : 3/26/2001

9. WITNESS:

If there is only one (1) inventor, a witness should sign and date this disclosure. A witness in this case is a non-inventor who understands the nature of the invention.

(Signature of Witness)

_____/_____
(Date)